

Claim Amendments

Amend the claims to read as follows:

1. (currently amended) A membrane device made by the method of claim 12 ~~comprised of:~~
a ~~porous monolith support formed from a reaction bonded ceramic powder, fired in an~~
~~oxygen free atmosphere, the monolith defining a plurality of passageways, having passageway~~
~~walls, extending longitudinally from one end face of the monolith to an opposing end face; and~~
a semipermeable membrane suitable for separating a feedstock into permeate and
retentate applied to the passageway walls.
2. (currently amended) The ~~device~~method of claim 12 in which the semipermeable membrane is selected from the group of membranes suitable for microfiltration, ultrafiltration, nanofiltration, pervaporation, reverse osmosis, and gas separations.
3. (canceled)
4. (currently amended) The ~~device~~method of claim 12 in which the reaction bond material is silicon nitride and the bond is formed by nitridation of a silicon-containing precursor.
5. (currently amended) The ~~method~~device of claim 4 in which the silicon-containing precursor is selected from the group consisting of silicon, silica, silicon oligomers, ~~or~~and mixtures thereof.
6. (currently amended) The ~~method~~device of claim 4 in which the ceramic powder is selected from the group consisting of silicon carbide, silicon nitride, alumina, mullite, zircon, zirconia,

titania, magnesia, and mixtures thereof.

7. (currently amended) The ~~method~~device of claim 12 in which the reaction bond material is silicon carbide and the bond is formed by carbide formation with a silicon-containing precursor.

8. (currently amended) The ~~method~~device of claim 7 in which the silicon-containing precursor is selected from the group consisting of silicon, silica, silica oligomers, ~~or~~and mixtures thereof.

9. (currently amended) The ~~method~~device of claim 7 in which the ceramic powder is selected from the group consisting of silicon carbide, silicon nitride, alumina, mullite, zircon, zirconia, titania, magnesia, and mixtures thereof.

10. (currently amended) The ~~method~~device of claim 12 in which the reaction bond material is SiAlON and the bond is formed by nitridation of aluminum and silicon containing precursors.

11. (currently amended) The ~~method~~device of claim 10 in which the ceramic powder is selected from the group consisting of silicon carbide, silicon nitride, alumina, mullite, zircon, zirconia, titania, magnesia, and mixtures thereof.

12. (currently amended) A method for making a membrane device, comprising
making a mixture containing at least one ceramic powder and at least one reactive binder precursor;

forming from the mixture a monolith defining a plurality of passageways, having passageway walls, extending longitudinally from one end face of the monolith to an opposing end face;

drying said monolith to form a green monolith;

firing said green monolith in an substantially oxygen-free atmosphere to react the reactive binder precursor with a gas, liquid or solid reactant to create a reaction bonded monolith membrane support, wherein the shrinkage of the green monolith during said firing step is less than about 5 percent;

cooling said reaction bonded monolith support; and

applying a semipermeable membrane to the passageway walls of said cooled monolith support to form a membrane device.